



JC10 Rec'd PCT 08 JUN 2005
PATENT

PCT #3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/526,775
Filing Date: March 8, 2005
Applicant(s): Yasuo SUDA et al.
Group Art Unit: Unknown
Examiner: Unknown
Title: LINKER COMPOUND, LIGAND, AND PRODUCING
METHOD THEREOF
Attorney Docket: 12480-000105/US

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314
Mail Stop Amendment

June 8, 2005

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant hereby submits an Information Disclosure Statement for consideration by the Examiner.

I. **LIST OF PATENTS, PUBLICATIONS, AND OTHER INFORMATION**

The patents, publications and other information submitted for consideration by the Office (except unpublished U.S. patent applications) are listed on Form PTO-1449 attached hereto.

II. **COPIES**

A. ☒ Submitted herewith is a legible copy of (i) each foreign patent; (ii) each publication or that portion which caused it to be listed, other than U.S. patents and U.S. patent application publications unless required by the Office; (iii) for each cited pending unpublished U.S. application listed below in Section IV, the application specification including the claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion; and (iv) all other information or that portion which caused it to be listed.

B. ☐ Any patents, publications or other information which are listed on Form PTO-1449 or on the copies of Form PTO-892, but which are not enclosed herewith, were

previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. § 120:

U.S. Serial Number

U.S. Filing Date

C. ☐ Because the present application was/is being filed after June 30, 2003, no copies of the U.S. patents or U.S. patent application publications which are listed on the attached Form PTO-1449 are enclosed pursuant to the waiver of 37 C.F.R. § 1.98(a)(2)(i). Any foreign patent documents or non-patent literature listed on the attached Form PTO-1449 are enclosed herewith.

D. ☐ This is a PCT application in the entry of the National Phase in the United States. A copy of the International Search Report is attached for the Examiner's information. The documents listed on the International Search Report are listed on the attached Form PTO-1449 for consideration by the Examiner and for listing on any patent resulting from this application. Since the International Search Report was from the US, EPO, or JPO search authorities, copies of these references should have been supplied to the USPTO under the trilateral agreement and are believed to be in the file of the above-identified application. (MPEP 1893.03(g))

III. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

A. ☒ Except as may be indicated below in (B), all of the patents, publications or other information are in the English language (concise explanation not required).

B. ☒ A concise explanation of the relevance of each patent, publication or other information listed that is not in the English language is as follows (see 37 C.F.R. § 1.98(a)(3)):

1. ☐ See the attached foreign patent office communication from a counterpart foreign application:
2. ☐ English translations are provided for:
3. ☒ Other: Discussion of the relevance and an English Abstract have been provided for Japanese Patent Publication No. JP 2003-83969 (A) (no. 1 listed on the attached PTO-1449 form); and

Discussions of the relevance have been provided for non-patent reference nos. 2 and 3 listed on the attached PTO-1449 form.

C. ☒ The following additional information is provided for the Examiner's consideration:

Please note that reference nos. 2 and 3 listed on the attached PTO-1449 form, were originally cited in the PCT International Search Report, which Applicants filed with the original application papers on March 8, 2005. Applicants now attach copies of these documents together with discussions of

their relevance for your review and consideration; and

Applicants found a clerical error in the PTO-1449 form filed with the original application papers on March 8, 2005. Namely, the publication date of the PCT Published Application No. WO 01/86301 A1 was listed as 05/10/2001 and should have been listed as **11/15/2001**. Given this, enclosed is a revised copy of the PTO-1449 form originally filed on March 8, 2005.

IV. CROSS REFERENCE TO RELATED APPLICATION(S)

A. ☐ The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this(these) application(s) to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. § 122.

Serial No.

Filing Date

Art Unit

V. THIS IDS IS BEING FILED UNDER

A. ☒ 37 C.F.R. § 1.97(b): (check only one box)

1. ☐ within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d) (37 C.F.R. § 1.97(b)(1)). No fee or certification is required.

2. ☒ within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application (37 C.F.R. § 1.97(b)(2)). No fee or certification is required.

3. ☐ before the mailing of a first Office Action on the merits (37 C.F.R. § 1.97(b)(3)). No fee or certification is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97(c) and see the certification under 37 C.F.R. § 1.97(e) below; or, if no certification has been made, charge our deposit account a fee in the amount of \$180.00 as required by 37 C.F.R. § 1.17(p).

4. ☐ before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No fee or certification is required.

B. ☐ 37 C.F.R. § 1.97(c): (check only one box)

☐ before the mailing date of either any Final Office Action under 37 C.F.R. § 1.113, a Notice of Allowance under 37 C.F.R. § 1.311, or an action that otherwise closes prosecution.

1. ☐ No certification; therefore, a fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

2. ☐ See the certification below. No fee is required.

C. ☐ 37 C.F.R. § 1.97(d):

☐ after the mailing date of either a Final Office Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311, yet on or before payment of the issue fee.

1. ☐ See the certification below. A fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

VI. CERTIFICATION UNDER 37 C.F.R. § 1.97(e): (check only one box)

The undersigned hereby certifies that:

- A. ☐ each item of information contained in this IDS was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(1)). See further statement under 37 C.F.R. § 1.704(d) below in section VII, if applicable; or
- B. ☐ no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(2)).
- C. ☐ Some of the items of information were first cited in a communication from a foreign patent office. As to this information, the undersigned hereby certifies that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby certifies that no item of this remaining information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS.

VII. STATEMENT UNDER 37 C.F.R. § 1.704(d)

The undersigned hereby states that:

☐ each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart application and this communication was not received

by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this IDS.

VIII. PAYMENT OF FEES (check only one box)

- A. ☐ No fee is believed to be due in light of the above-provided certification.
- B. ☐ A check in the amount of \$180.00 is enclosed for the above-identified fee.
- C. ☐ Please charge Deposit Account No. 08-0750 in the amount of \$180.00 for the above-indicated fee. A duplicate copy of this paper is attached.

The above references are being cited only in the interest of candor and without any admission that they constitute statutory prior art, contain matter which anticipates the invention, or which would render the same obvious, either singly or in combination, to a person of ordinary skill in the art. Furthermore, this Information Disclosure Statement shall not be construed as a representation that a search has been made.

If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 08-0750.

Please charge any additional fees or credit any overpayment pursuant to 37 C.F.R. §§ 1.16 or 1.17 to Deposit Account No. 08-0750.

Respectfully submitted,

HARNESS, DICKEY & PIERCE, P.L.C.

By 

Donald J. Daley, Reg. No. 34,313
P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

DJD/bof

Enclosures:



PTO-1449 form

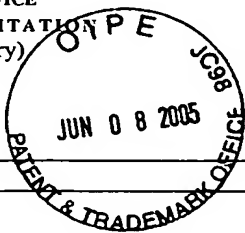
Documents

Foreign Search Report

Fee

Other: Revised PTO-1449 form from 03/08/2005

FORM HDP-1449 (Based on Form PTO-1449) PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) Sheet 1 of 1	ATTORNEY DOCKET NO.	SERIAL NO.
	12480-00010	10/526,775
	APPLICANTS	
	Yasuo SUDA et al.	
	FILING DATE	GROUP
	March 8, 2005	Unknown



U.S. PATENT DOCUMENTS						
Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(If appropriate) Filing Date

FOREIGN PATENT DOCUMENTS						
Ref. Desig.	Examiner's Initials	Document Number	Date	Country	Class/ Subclass	Translation Yes No
		#1=JP 2003-83969 (A)	03/19/2003	JAPAN		ABST. <input type="checkbox"/>

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)		
Ref. Desig.	Examiner's Initials	
		#2= "Synthesis of a conjugate having heparin partial structure and a distal disulfide group and its application to chip technology", A. ARANO et al., Tentative Lecture Proceedings II in the 79 th Spring Meeting, Chemical Society of Japan, March 15, 2001, p 1042 (4 G3 05)
		#3= "Preparation of a novel clustered oligosaccharide-ligand containing multi-units of heparin partial structure and its application for chip technology", A. ARANO et al., Chemical Society of Japan, the 82 nd Fall Meeting, September 10, 2002, p. 137 (1C1-11)
		#4= "Synthesis of Sugar Arrays in Microtiter Plate", F. FAZIO et al., J. AM. CHEM. SOC. 2002, 124, pp. 14397-14402
		#5= "Carbohydrate Chips for Studying High-Throughput Carbohydrate Protein Interactions", S. PARK et al., J. AM. CHEM. SOC. 2004, 126, pp. 4812-4819
		#6= "Nonstatistical binding of a protein to clustered carbohydrates", N. HORAN et al., PNAS, October 12, 1999, vol. 96, no. 21, pp. 11782-11786
		#7= "Carbohydrate Arrays for the Evaluation of Protein Binding and Enzymatic Modification", B. T. HOUSEMAN et al., Chemistry & Biology, Vol. 9, pp. 443-454, April 2002
		#8= "Using Model Substrates To Study the Dependence of Focal Adhesion Formation on the Affinity of Integrin-Ligand Complexes", M. KATO et al., Biochemistry 2004, 43, pp. 2699-2707
		#9= "Probing Protein-Carbohydrate Interactions with Microarrays of Synthetic Oligosaccharides", D. M. RATNER et al., ChemBioChem, 2004, 5, pp. 379-382
		#10= "Oligosaccharide microarrays to decipher the glyco code", T. FEIZI et al., NATURE REVIEWS, July 2004, vol. 5, pp. 582-588

DJD/bof

Examiner:	Date Considered:
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EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



REVISED

Sheet 1 of 1

Form PTO-1449

INFORMATION DISCLOSURE CITATION IN AN APPLICATION

(Use several sheets if necessary)

PATENT DOCKET NO.
12480-000105/US

APPLICANT(S)
Yasuo SUDA et al.

FILING DATE
March 8, 2005

APPLICATION NO.
NEW APPLICATION

CONF. NO.
Unknown

GROUP
Unknown

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION	
					YES	NO
WO 01/86301 A1	05/10/2001 11/15/2001	WIPO				
JP 2002-080488 A	03/19/2002	JAPAN				

OTHER DOCUMENTS

(Include Name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.

	Akio ARANO et al., "Heparin Bubun Kozo o Yusuru Cluster-ka Oligo-torui Ligand no gosei to chip Technology eno Oyo", CSJ: The chemical Society of Japan Dai 82 Shuki Nenkai (2002) Kagaku Kankeigaku Kyogikai Kenkyu Happyokai Rengo Toronkai Godo Taikai, 10 September 2002 (10.09.02), Page 137 (1C1-11)
	Yasuo SUMIDA, "Ryusanka Tennen Tato no Kino Domain Kozo no Saikochiku to Sensor Chip eno Oyo", CSJ: The Chemical Society of Japan Dai 81 Shunki Nenkai 2002 Nen Koen Yokoshu II, March 2002, Page 949 (1F6-33)
	Hideki HAYASHI et al., "Ryusanka Oligo-to no Shugoka, Biotin-ka oyobi Sono Hyomen Plasmon Kyomei eno Oyo", CSJ: The Chemical Society of Japan Dai 79 Shunki Nenkai (2001) Koen Yokoshu II, March 2001, Page 1042 (4G304)
	Akio ARANO et al., "Disulfide Ketsugo O Yusuru Linker O Ketsugo saseta Heparin Bubun Kozo no Gosei to Chip Technology eno Oyo", CSJ: The Chemical Society of Japan Dai 79 Shunki Nenkai (2001) Koen Yokoshu II, March 2001, Page 1042 (4G305)
	KOSHIDA S et al., An efficient method for the assembly of sulfated oligosaccharides using reductive amination., Tetrahedron Lett., 2001, Vol. 42, Pages 1293 to 1296
	KOSHIDA S et al., Synthesis of oligomeric assemblies of a platelet-binding key disaccharide in heparin and their biological activities., Tetrahedron Lett. 2001, Vol. 42, Pages 1289 to 1292
	Yasuo SUMIDA et al., "Ryusanka Oligo-to o Koteika shita Sugar Chip no Kaihatsu to Hyomen Plasmom Kyomeiho eno Oyo, Seikagaku, 25 August 2002 (25.08.02), Vol. 74, No. 8, Page 849 (3P-047)
	Hideki HAYASHI et al., "Ryusanka Oligo-to no Shugoka, Biotin-ka to Sono Sensor chip eno Oyo", Dai 23 Kai The Japanese Society of Carbohydrate Research Nenkai Yoshishu, July 2002, Page 75 (PI-05)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

DJD/smk